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ABSTRACT

This study investigated student satisfaction at a comprehensive regional university using a questionnaire grounded in the disconfirmation theory of customer satisfaction. A total of 165 students enrolled in business courses were surveyed at the beginning of the semester regarding their expectations of the university, with 104 students completing follow-up questionnaires at the end of the semester on their actual experiences. Included in the follow-up questionnaire was the traditional satisfaction/dissatisfaction question (a Likert-type scale ranging from "strongly dissatisfied" to "strongly satisfied." Applying the disconfirmation process to the follow-up questionnaire indicated that 93.1 percent of the students surveyed were dissatisfied with their educational experience, while on the traditional question of satisfaction, 89.3 percent of the same students indicated that they were satisfied with their experience. These results clearly indicate a disparity between the disconfirmation approach to satisfaction assessment and the traditional method. Results also suggest that students' educational experience does not live up to their expectations of what an excellent university should offer. Two appendixes provide copies of the questionnaires. (Contains 21 references.) (MDM)

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Running Head: DISCONFIRMATION THEORY

Disconfirmation Theory:

An Approach to Student Satisfaction Assessment in Higher Education

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HE 028 743

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Abstract

Current standardized student satisfaction instruments assess satisfaction as if it is a static construct. Furthermore, the traditional assessment format is a satisfaction/dissatisfaction question measured on a four to five point Likert-type scale that ranges from "strongly dissatisfied" to "strongly satisfied". This format is grounded in the job satisfaction theory of the 1970s and a "student as employee" philosophy. With the current "student as consumer" philosophy, we hypothesize that the traditional method of satisfaction assessment based on job satisfaction theory may not be reliable.

To investigate the student satisfaction process, we used an instrument grounded in the disconfirmation theory of customer satisfaction. Data was gathered from undergraduate students attending a comprehensive regional university. Respondents completed a questionnaire at the beginning of the spring semester on their expectations (n=165) and then completed a follow-up questionnaire at the end of the semester on their experiences (n=104). Included in the follow-up questionnaire was the traditional satisfaction/dissatisfaction question. In a preliminary analysis of the data, the disconfirmation process indicated that 93.1% of students were dissatisfied with their educational experience. However, on the traditional question of satisfaction, 89.3% of the same students indicated that they were satisfied with their experience. The results clearly indicate a disparity between the disconfirmation approach to satisfaction assessment and the traditional method.

Disconfirmation Theory: An Approach to Student Satisfaction Assessment in Higher Education

Over the past three decades, there have been a variety of theories employed to explain the motivation of college students toward satisfaction. Witt and Handal (1984) used person-environment fit theory to explain student satisfaction with the college experience. Tinto (1975) used Durkheim's theory of suicide and cost-benefit analysis to explain student satisfaction with college and the student's decision to persist to graduation. Okun, Ruehlman, & Karoly (1991) employed investment theory to understand the satisfaction of students in a community college setting. Carvey (1987) and Polcyn (1986) used the marketing theory of importance-performance analysis to explain student satisfaction with an MBA program. Each of these theories have been used to design, develop, and administer assessments of student satisfaction with the higher education experience.

However, since the early 1970s, the most frequently used student satisfaction instrument has been the College Student Satisfaction Questionnaire (CSSQ) developed by Betz, Klingensmith, & Menne (1970) using job satisfaction theories. The CSSQ has been used to investigate student satisfaction in a variety of educational situations. For example, the CSSQ has been used to investigate the satisfaction of African-American students (Provost, 1989), the satisfaction of students attending a community college (Stalnaker, 1994), and the satisfaction of nontraditional age students (Robinson, 1987).

In developing a student satisfaction assessment instrument, Betz et al. (1970) borrowed theoretical constructs from the job satisfaction theories of Herzberg, Mausner, Peterson, & Capwell (1957), Hoppock (1935), and Vroom (1964). With the use of these job satisfaction theories in the design of student satisfaction assessment, Betz et al. postulated that the student of the university was similar in motivation to the employee of the university. They argued that, similar to the university employee, the student would determine satisfaction based on the value of their input into the educational process (studying) compared with their educational compensation (grades) (Pennington, Zvonkovic, & Wilson, 1989). As long as the higher education student viewed the value of the educational compensation to be greater than the value of their educational input, the student would be motivated toward satisfaction with their higher education experience.

At the time of the Betz et al. (1970) research, higher education was enjoying phenomenal growth in both student enrollment and financial resources (Brubacher, 1982). It is reasonable to assume that during such a period of largess in resources, the student of the higher education process was comparable in motivation to the employee of the academic institution. The student 'worked' for the grades they received, and as long as the value of that 'work' did not exceed the value of the grade, then the higher education student was satisfied with the education experience. However by the mid-1990s the higher education environment, and the relationship between the academy and the college student, had changed.

Today, the external environment of higher education is characterized by declining enrollments of traditional age students and increasing enrollment of older nontraditional age students; increasing pressure for the accountability of the higher education process by external stakeholders (Ewell, 1991); and declining trust in the quality of the higher education student by future employers of that student (Pike, 1993). All of these current characteristics of higher education have had one important result; the 'consumerization' of the higher education student. This new "student as consumer" philosophy sheds new light on the motivation of the higher education student in determining satisfaction (Afrassiabi, 1987). Today, the student is not simply another "employee" of the education process, but a "consumer" of the education outcome.

Based on this shift in focus from the "student as employee" to the "student as consumer", it is reasonable to suggest that the student satisfaction assessments based on job satisfaction theory are no longer applicable to the student experience. While past researchers have borrowed heavily from the management discipline and job satisfaction theory, it is suggested that current researchers shift their focus to customer satisfaction theories from the service marketing discipline.

Of further concern to the assessment of student satisfaction is the temporal constraint of current student satisfaction assessment surveys. Like the CSSQ, contemporary student satisfaction surveys are designed to measure satisfaction with an educational experience at a given point in time. The design of these satisfaction questionnaires and the method in which they are administered reduces student satisfaction to a static outcome of a uni-dimensional process. Researchers in marketing, however, have a different perspective on satisfaction, in general, and customer satisfaction, specifically. According to Oliver (1993), satisfaction is an on-going process

that is situation and experience specific. More specifically, satisfaction is the process of fulfillment; a process in which a customer will experience a beginning expectations state and an ending performance state.

Researchers postulate that because of the dynamic nature of satisfaction, the most appropriate method for assessing customer satisfaction is through an expectancy-disconfirmation process (Oliver, 1993; Parasuraman, Zeithaml, & Berry, 1988). In this disconfirmation process, satisfaction is the differential between an individual's expectations about the outcome of a process before experiencing the process and the actual outcome as perceived by the individual. According to Oliver, the disconfirmation process is a

> ...'better than/ worse than' heuristic whereby a negative disconfirmation results when outcomes are poorer than expected, positive disconfirmation results when outcomes are better than expected, and confirmation (zero disconfirmation) obtains when outcomes match expectations. Satisfaction has been shown to be a function of the positivity of disconfirmation. Positive disconfirmation enhances satisfaction and negative disconfirmation decreases it, while simple confirmation has little affective impact on satisfaction. (p. 73-74).

Oliver further theorizes that satisfaction is a superordinate construct with quality as an antecedent. With this hierarchical relationship between quality and satisfaction, Oliver suggests that the most appropriate method of assessing satisfaction is utilizing a disconfirmation process that measures the customer's perceived quality of the experience.

In choosing a theoretical construct for quality and the assessment of quality, it is important to first understand if the process under investigation is a product producing process or a service producing process. There are four characteristics by which these two processes are defined; tangibility of the product or intangibility of the service; separability of the production process from the provider; perishability or shelf life of the product or service; and standardization of product or the variability of service features (Kotler, 1988). Because of the intangibility of the education service, the inability to separate the education service from the service provider, the variability of the education process, and the high degree of perishability of the education service over time, the academy can be classified as a service provider. With this distinction in mind, it is appropriate to

turn to service marketing for guidance on the assessment of quality.

Within the service marketing discipline, Parasuraman, Zeithaml, & Berry (1988) have conducted extensive research on the measurement of quality with a service experience. They have found that to understand service quality, in toto, there are five subscales of service quality that must be assessed separately. These quality components are; the tangibles of the service experience, the reliability of the service experience over time, the responsiveness of the service provider to customer demands, the assurance or confidence level that is projected by the service provider, and the empathy of the service provider to the unique needs of the customer.

The tangibles of the higher education service include the quality of university facilities, i.e., classrooms, dorms, computer labs, and the campus library. Reliability of the higher education experience is the consistent quality of teaching among faculty. Responsiveness is the ability of the higher education institution to remain flexible to the diverse demands of the student population. Assurance is the projected confidence of administration, staff, and faculty in providing a quality education experience. Empathy of the institution is the ability to sympathize with the unique concerns and problems facing individual students.

Parasuraman et al. (1988) used the results of their research to develop a questionnaire that measures customer expectations and perceptions on each of these five subscales for a service experience. The Parasuraman et al. questionnaire, or SERVQUAL, is administered in two phases. The first phase or the expectations battery, assesses the service expectations of the customer within the five subscales before the customer experiences the service (Refer to Appendix A for a copy of the expectations battery.) On the expectations battery, the respondent is asked to score their attitude about a variety of statements on their service expectation with a hypothetical 'excellent' service provider. The attitude scale is a seven point Likert-type scale with '1' as strongly disagree and '7' as strongly agree.

The second phase, or the performance battery, measures the customer's perception of the service experience after the fact (Refer to Appendix B for a copy of the performance battery). Because the performance battery is designed to measure the disconfirmation of the respondent, each statement on the performance battery is an identical match to the expectations battery with a difference in the wording of the statement. For example, on the expectations battery statement #1

is:

1. Excellent universities will have modern looking facilities.

On the performance battery statement #1 is:

1. (University name) has modern looking facilities.

The disconfirmation process then becomes a simple comparison of the attitude scoring on statement number 1 of the expectations battery and statement number 1 of the performance battery. Utilizing this expectancy-disconfirmation process, SERVQUAL produces an analysis of the disconfirmation gap between expectation and perception to indicate perceived quality. According to Oliver (1993), this quality disconfirmation process can then be used to understand the satisfaction of the individual with the service experience.

The purpose of this research was to employ the expectancy-disconfirmation process of determining satisfaction utilizing the Parasuraman et al. (1988) SERVQUAL questionnaire to investigate the satisfaction of students enrolled in the College of Business at a comprehensive regional university in Tennessee. The intent of this study was to explore the appropriateness of using a customer satisfaction theory to explain student satisfaction. A further intent was to compare the results of a student satisfaction assessment using the disconfirmation approach to the results of a student satisfaction assessment using the traditional static measurement of satisfaction.

Method

The experimentally accessible population was college students taking business courses at a regional university during the spring semester 1995. Using cluster sampling a group of classes were selected at random from the following business disciplines; marketing, management, accounting, finance, and economics. The only non-randomly selected class was an introductory class. This class was chosen as a part of the sample because of the larger number of freshmen and sophomore students in the class. All of the remaining classes were composed primarily of juniors and seniors. The sampling frame for choosing the courses was the spring course schedule. After selecting each course, a memo was sent to faculty requesting permission to visit with the class to administer the questionnaire.

Employing the disconfirmation process, the data for this study was collected in two phases. During the second week of the spring semester, the expectations battery was administered in ten

business classes with 165 respondents to the questionnaire. Students were given a scantron to score their answers to the questionnaire. For the expectations battery, students used question numbers 1 through 22 on the scantron. To ensure a proper match between the expectations battery and the performance battery, students were asked to mark their scantron with the last five digits of their social security number as an anonymous identifier. At the end of the semester the performance battery was administered in the same ten classes. Using the anonymous identifier, the original scantron was given to each participating student. The student was asked to score their answers to the performance battery on the original scantron using question numbers 23 through 49.

The performance battery used in this research was developed using the 22 statements of SERVQUAL and three original questions specific to this research. Question 46 was a demographics question assessing gender. (The data collected from this question will be used at a later date to analyze satisfaction differences based on gender.) Question 47-49 requested information on student credit hours. This question was used to track the credit hour standing of respondents. Finally, to compare the disconfirmation process with the traditional method of assessing student satisfaction, researchers added question 45 to the performance battery:

45. Overall, how would you rate your satisfaction with your educational experience at (University name)?

The student was asked to respond to this question using the traditional four point Likert-type scale of current student satisfaction assessments.

In developing the expectations battery an inadvertent error was made in typing the battery. Statement 15 and statement 16 of the expectations battery were repeat statements. The error was discovered after the students had scored the battery. To compensate for this error, statement 37 and statement 38 on the performance battery were matched to the expectations battery. The repetitive nature of #15 and #16, and #37 and #38, were taken into account during data analysis.

In the second phase of data collection, only 104 of the 165 respondents scored the performance battery. The sixty-one students lost to attrition were either students who had dropped the course or were absent on the day of the second administration. A MANOVA analysis was used to assess whether there were differences in expectations among the attritted and non-attritted

groups. With attrition as the independent variable and the five dimensions of the expectations battery as the dependent variable, the MANOVA analysis found no difference in expectations between the attritted and the non-attritted group (Pillais's Trace pvalue < .103). A Box's M test for non-homogeneity of variance was also non-significant (pvalue < .546).

Results

As shown in Table 1, the coefficient alpha reliabilities for the expectations battery and the performance battery for four of the five subscales indicated adequate reliabilities. However, a problem with the reliability of the tangibles subscale was found. The coefficient alpha reliabilities for the tangibles subscale on the expectations battery and on the performance battery were .65 and .72, respectively. Thus, care should be exercised in assessing any results based on the tangibles scales.

Insert Table 1 about here

The substantive results depicted in Table 2 identify severe disparities in perceived satisfaction between the two methods of measurement. When students were asked to rate their satisfaction on the four-point scale, 89.3% were either satisfied (83.2%) or very satisfied (6.1%). A very different result was obtained, however, when the disconfirmation paradigm was used as the method of analysis.

Insert Table 2 about here

The disconfirmation approach has a natural zero point in which performance is equal to expectations and there is little affective influence on satisfaction. Therefore, a negative result in the mean score in Table 2 indicates that students were dissatisfied or that the university's performance did not live up to expectations. At the individual level, 93.1% of the students were dissatisfied overall as compared to the 89.3% who responded as satisfied with the university employing the traditional method of assessing student satisfaction. For the individual subscales, at least 50% of the students were dissatisfied with all of the five subscales. The lowest level of dissatisfaction was

50.5% for the tangibles dimension. The dissatisfaction level ranged from 88% to 92% for the other four subscales (Reliability, Responsiveness, Assurance, and Empathy). Additionally, the mean level of dissatisfaction for these four ranged scales was over two scale points and ranged from -1.8 for empathy to -2.4 for reliability.

Limitations

There were three primary limitations to this study. The first limitation was the error made on the expectations battery that had to be incorporated into the performance battery. Even though this error was taken into consideration during data analysis, it may have had an affect on respondents while they scored their scantron that could not be accommodated for during data analysis. Second, the sample composition was largely juniors and seniors. Because of their experience with the university, it is reasonable to question the validity of their responses to the expectations battery. Third, the inclusion of the one non-randomly chosen freshmen/sophomore level introductory class with the randomly chosen junior/senior classes may have had an effect on the disparity between the disconfirmation results and the traditional static assessment results.

Implications and Recommendations

As mentioned, for the traditional student satisfaction question on the performance battery 89.3% indicated that they were satisfied with their educational experience at the regional university. This compares favorably with other student satisfaction surveys administered at this university with a student satisfaction rating of approximately 86% (Franklin, 1994). However, the disconfirmation process of this study found that an overwhelming percentage of students (93.1%) were dissatisfied with their overall educational experience.

The implications to this research are clear; a large discrepancy does exist between the two methods of assessing student satisfaction. The results show that merely asking for ordinal point responses to a single questionnaire item may mask the true satisfaction level of students. A university may believe that its students are satisfied with their educational experience even in situations where there is clear evidence that the university is not performing up to students' expectations. It can be suggested, based on the results of this study, that the disconfirmation process of assessing student satisfaction may be preferable to the traditional static assessment of satisfaction.

It is recommended that further research is conducted into the appropriateness of the disconfirmation process to investigating student satisfaction. To rectify the limitations of this study, future research should include a test study of administering an expectations battery to freshmen at matriculation and then administering the performance battery to those students who have persisted to graduation. Researchers should focus on the development of an expectations and performance battery that is more applicable to the education experience. Because the focus of this study was on the disconfirmation process and not on the applicability of the statements in the questionnaire to education, the only changes that were made by the researchers of this study to the Parasuraman et al. (1988) batteries was to change the wording from 'excellent company' to 'excellent university'. It is possible that with the use of education statements instead of the general 'service' statements of SERVQUAL the disparity between the disconfirmation process and the traditional static assessment of student satisfaction would be reduced.

Table 1

Coefficient Alpha Reliability for each Subscale

Subscale	Coefficient Alpha	
	Expectations	Performance
Tangibles	.65	.72
Reliability	.89	.91
Responsiveness	.90	.89
Assurance	.76	.86
Empathy	.85	.89
Overall	.91	.95

Table 2

Comparison of Satisfaction Statistics for the Disconfirmation Approach and the Traditional Approach

	Disconfirmation (P-E)						
Response	Tangibles	Reliability	Responsiveness	Assurance	Empathy	Overall Disconfirmation	Overall Satisfaction[a]
Mean[b]	-.3	-2.4	-2.2	-2.0	-1.8	-1.8	3.0
% Satisfied[c]	49.5	8.7	8.9	7.9	11.9	6.9	89.3
% Dissatisfied	50.5	91.3	91.1	92.1	88.1	93.1	10.6

[a]The overall satisfaction question was formatted as follows:
"Overall how would you rate your satisfaction with your educational experience at (University Name)."
'1'= very dissatisfied '2'= dissatisfied '3'= satisfied '4'= very satisfied.

[b]The mean satisfaction score for disconfirmation data is computed by taking the mean of the expectations scores for each scale and then subtracting the mean of the performance scores. Thus, a mean of negative one indicates that on average, respondents expectations were one scale point higher than their assessment of the university's performance.

[c]According to disconfirmation theory, customer satisfaction is achieved when performance equals or exceeds expectations and dissatisfaction occurs when performance falls short of expectations.

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Appendix A

Expectations Battery

Directions: Based on your experiences as a college student, please think about the kind of university that would deliver excellent quality of education service. Think about the kind of university with which you would be pleased to attend. (When you think about the services of an excellent university, please include the quality of classroom instruction.) Please show the extent to which you think such a university would possess the feature described by each statement. If you feel a feature is not at all essential for an excellent university, such as the one you have in mind, circle the number "1". If you feel a feature is absolutely essential for excellent universities, circle "7". If your feelings are less strong, circle one of the numbers in the middle. There are no right or wrong answers -- all we are interested in is a number that truly reflects your feelings regarding universities that would deliver excellent quality of services.

Mark your responses on the attached scantron. Use the following scale for your responses:

1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

1. Excellent universities will have modern looking facilities
2. The physical facilities at excellent universities will be visually appealing.
3. Employees of excellent universities will be neat appearing.
4. Materials associated with the service (such as schedules of courses and the undergraduate catalog) will be visually appealing in an excellent universities.
5. When excellent universities promise to do something by a certain time, they will do so.
6. When students have a problem, excellent universities will show a sincere interest in solving it.
7. Excellent universities will perform services right the first time.
8. Excellent universities will provide their services at the time they promise to do so.
9. Excellent universities will insist on error-free records.
10. Employees of excellent universities will tell students exactly when services will be performed.
11. Employees of excellent universities will give prompt service to students.
12. Employees of excellent universities will always be willing to help students.
13. Employees of excellent universities will never be too busy to respond to student requests.
14. The behavior of employees of excellent universities will instill confidence in students.
15. Employees of excellent universities will be consistently courteous with students.
16. Employees of excellent universities will be consistently courteous with students.
17. Employees of excellent universities will have the knowledge to answer student questions.
18. Excellent universities will give students individual attention.
19. Excellent universities will have operating hours convenient to all their students.
20. Excellent universities will have employees who give students personal attention.
21. Excellent universities will have the student's best interests at heart.
22. The employees of excellent universities will understand the specific needs of their students.

Appendix B

Performance Battery

Directions: Based on your experiences as a (University name) college student, please respond to the following questions. Circle the number "1" if you strongly disagree with the statement as it applies to (University name). Circle "7" if you strongly agree with the statement. If your feelings are less strong, circle the numbers in the middle. There are no right or wrong answers--all we are interested in is a number that truly reflects your feelings regarding (University name).

Mark your responses on the attached scantron. Use the following scale for your responses:

1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

23. (University name) has modern looking facilities
24. The physical facilities at (University name) are visually appealing.
25. Employees of (University name) are neat in appearance.
26. Materials associated with the service (such as schedules of courses and the undergraduate catalog) are visually appealing at (University name).
27. When (University name) promises to do something by a certain time, they will do so.
28. When students have a problem, (University name) shows a sincere interest in solving it.
29. (University name) does perform services right the first time.
30. (University name) does provide their services at the time they promise to do so.
31. (University name) does insist on error-free records.
32. Employees of (University name) tell students exactly when services will be performed.
33. Employees of (University name) give prompt service to students.
34. Employees of (University name) are always willing to help students.
35. Employees of (University name) are never be too busy to respond to student requests.
36. The behavior of employees at (University name) instill confidence in students.
37. Employees of (University name) are consistently courteous with students.
38. Employees of (University name) are consistently courteous with students.
39. Employees of (University name) have the knowledge to answer student questions.
40. (University name) does give students individual attention.
41. (University name) does have operating hours convenient to all their students.
42. (University name) does have employees who give students personal attention.
43. (University name) does have the student's best interests at heart.
44. The employees of (University name) understand the specific needs of their students.
45. Overall how would you rate your satisfaction with your educational experience at ETSU?

1----------2----------3----------4

Very Dissatisfied Dissatisfied Satisfied Very Satisfied

46. What is your gender? (1=Male, 2=Female)

Use slots 47-49,
How many hours will you have completed by the end of the semester?